

The terminal segment of the abdomen is longer than the basal and not pointed as in *Rhynchoplax woodmasoni*.

The male gonopod is not considerably curved at its distal end. The curved end is very short. A row of setae on the interior external and distal margin is present.

Based on the characters, the present

specimen is an immature male. Kemp (1917) detailed the adult and juvenile structural changes.

February 19, 1997

L. PRABHADEVI

G. SARASWATHY AMMAL

Department of Aquatic Biology & Fisheries,
Beach P.O., Thiruvananthapuram - 695 007,
Kerala.

REFERENCES

- CHOPRA, B. & K.N. DAS (1930): On two new species of Hymenosomatid crabs, with notes on some other species. Further notes on Crustacea:Decapoda in the Indian Museum. *Rec. Indian Mus.* 32: 413-429.
- GRAVELY, F.H. (1927): Crustacea. In: The littoral fauna of Krusadai Island in the Gulf of Mannar. *Bull. Madras Govt. Mus.* (n.s.) i, no. 1, 141-155.
- KEMP, S. (1917) Notes on Crustacea:Decapoda in the Indian Museum-Hymenosomatidae. *Rec. Indian Mus.* 13: 243-279.

31. RECORD OF *TRIOPS* (CRUSTACEA: BRANCHIOPODA: NOTOSTRACA) FROM PUNE, MAHARASHTRA

During a survey of temporary rain-water pools of Pune we came across some tadpole shrimps, *Triops*, in a large pool on the Alandi road (about 15 km from Pune Station). We could collect only a couple of live specimens in August 1995 but there were several fragments of carapaces around, suggesting a large population in July. The same pool also contained a large population of fairy shrimps (*Streptocephalus dichotomus*) and clam shrimps (species not identified) which are known to be prey animals for *Triops*. The pool was at least 1.5 metres deep in the centre and contained muddy and turbid water.

Fox (1949) and Williams (1987) have dealt with nomenclature and habits of this interesting animal, known earlier as *Apus*. Though *Triops* has been reported from Panchgani (Karande and Inamdar 1959), it has not been reported from Pune.

Tiwari (1951) had discussed taxonomic status and listed Indian species of tadpole shrimps, which included what he considered to be two new species. Shanbagh and Inamdar (1968) have pointed out that *Triops* is an archaic genus that has been evolutionarily stagnant since

the Triassic period. They have also remarked on its rarity, having been recorded only from nine localities in India — from Kashmir in the Himalayas to Tirunelveli (Madras) in the south.

Sanjeeva Raj (1971), citing the work of Longhurst (1955), stated that there are only 4 valid species of the genus *Triops*, although more than 40 species had been described the world over. This is so because the genus is notorious for tremendous variation in external morphology. In India there are only two species — *Triops cancriformis* (Bosc) and *T. granarius* (Lucas). The former is mainly found in the Himalayas while the latter is found in the rest of India (at least south of Panchgani in Satara, Maharashtra). Surendra Nath considered *Apus kashmiriensis* Das to be a synonym of *T. cancriformis* (Surendra Nath 1979, 1985).

One of our college students, Mr. Sachin Ranade, observed hundreds of *Triops* in a stone quarry at Talegaon (on Pune - Mumbai road), on 28th June, 1996 and collected two poorly preserved specimens. All four specimens (two from Alandi road and two from Talegaon) have a carapace length of about 9 mm and total length (excluding furca) of about 13.5 mm.

Most of the taxonomic characters of our specimens agree well with the description of *Triops granarius* as given by Sanjeeva Raj (1971). Our specimens are however almost half the size reported by Sanjeeva Raj (18-20 mm median carapace length: 9 mm in our sample). A few salient features of the four specimens are: carina on carapace prominent but without terminal spine, spine in the sulcus 44, dorsal surface of the posterior region of carapace with fine denticles, fifth endite of first thoracic leg projects beyond hind end of carapace; number of exposed segments behind sulcus 9, apodal segments 9; these segments possess 9 dorsal and 8 or 9 ventral prominent, chitinised, brown

spines; telson broader than last abdominal segment with two median spines, 3 setal spines and 2 transverse spines at posterior margin; lateral margin of telson spiny with 5 prominent spines; furca (12 mm) longer than carapace length.

We thank our M.Sc. students, especially Neelesh Rane and Sachin Ranade, who took part in surveying nearby ponds. Thanks are also due to the authorities of Modern College for encouragement and for providing facilities.

December 19, 1996

H.V. GHATE

NAGRAJ SHETTY

Department of Zoology,
Modern College, Pune-411 005.

REFERENCES

- FOX, H.M. (1949): On *Apus*: its rediscovery in Britain, nomenclature and habits. *Proc. Zool. Soc. Lond.*, 119: 693-703.
- KARANDE, A.A. & N.B. INAMDAR (1959): Observations on the taxonomic characters of *Triops orientalis* (Tiwari), with a note on its biology. *J. Bombay nat. Hist. Soc.* 56: 215-225.
- LONGHURST, A.R. (1955): A review of the Notostraca. *Bull. Brit. Mus. (Nat. Hist.)*, 3: 1-57. (Not seen in the original).
- NATH, SURENDRA (1979): Extension of range of *Triops cancriformis* (Bosc) (Branchiopoda: Notostraca: Apodidae) to Poonch valley (Jammu and Kashmir State). *J. Bombay nat. Hist. Soc.* 76: 543.
- NATH, SURENDRA (1985): On the taxonomic status of *Apus kashmiriensis* Das (Crustacea: Branchiopoda: Notostraca: Apodidae). *J. Bombay nat. Hist. Soc.* 82: 424-427.
- SANJEEVA RAJ, P.J. (1971): *Triops granarius* (Lucas) (Crustacea: Branchiopoda) from Tamil Nadu, and a review of the species from India. *J. Bombay nat. Hist. Soc.* 68: 161-168.
- SHANBAGH, S.V. & N.B. INAMDAR (1968): On the occurrence of *Triops mavliensis* (Tiwari), Notostraca (Crustacea), in the Okhamandal region of Saurashtra (India). *J. Bombay nat. Hist. Soc.* 65: 408-417.
- TIWARI, K.K. (1951): Indian species of the genus *Apus* (Crustacea: Branchiopoda) with description of two new species. *Rec. Indian Mus.*, XLIX: 197-205.
- WILLIAMS, D.D. (1987): *The Ecology of Temporary Waters*. Croom Helm, London.

32. LIFE-HISTORY OF A SUCCINEID SNAIL *SUCCINEA DAUCINA* (PFEIFFER)

Succineids are found in meadows or on the banks of rivers, streams and lakes or in water. From these habitats they move on to neighbouring crop fields for feeding on agrihorticultural plants (Rigby 1965, Valovirta 1967, Lahdesmaki 1970, Godan 1983). Some of them are known to serve as intermediate hosts of cestode and trematode parasites of birds and cattle (Enigh *et al.* 1957, Godan 1983). India is represented by 25 species of Succineidae, belonging to five genera (Gude

1914, Rao 1925, Hora 1925) but information on the natural history of these snails is confined only to *Indosuccinea semiserica* (Gould) (Raut and Ghose 1984, Raut 1986). Recently, we had the opportunity to collect some live *Succinea daucina* (Pfeiffer) specimens from amongst the vegetation at the edge of a pond located in village Gopal chak, Contai, West Bengal, India. They were cultured in the laboratory and some aspects of their life-history were studied.